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DEPARTMENT OF COMMERCE

National Ocean and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No. 130808698-3698-01]

RIN 0648-XC809

Endangered and Threatened Wildlife; 90-day Finding on Petitions to List the Pinto Abalone as Threatened or Endangered Under the Endangered Species Act

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: 90-day petition findings, request for information, and initiation of status review.

SUMMARY: We, NMFS, announce 90-day findings on two petitions received to list the pinto abalone (*Haliotis kamtschatkana*) as a threatened or endangered species under the Endangered Species Act (ESA) and to designate critical habitat concurrently with the listing. We find that the petitions and information in our files present substantial scientific or commercial information indicating that the petitioned action may be warranted. We will conduct a status review of the species to determine if the petitioned action is warranted. To ensure that the status review is comprehensive, we are soliciting scientific and commercial information pertaining to this species from any interested party.

DATES: Information and comments on the subject action must be received by [insert date 60 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: You may submit comments, information, or data, identified by “NOAA-NMFS-2013-0158” by any one of the following methods:

- Electronic Submissions: Submit all electronic comments via the Federal eRulemaking Portal [http:// www.regulations.gov](http://www.regulations.gov). To submit comments via the e-Rulemaking Portal, first click the “submit a comment” icon, then enter “NOAA-NMFS-2013-0158” in the keyword search. Locate the document you wish to comment on from the resulting list and click on the “Submit a Comment” icon on the right of that line.
- Mail or hand-delivery: Protected Resources Division, West Coast Region, NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213.

Instructions: All comments received are a part of the public record and may be posted to <http://www.regulations.gov> without change. All personally identifiable information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or other information you wish to protect from public disclosure. NMFS will accept anonymous comments. Attachments to electronic comments will be accepted in Microsoft Word, Excel, Corel WordPerfect, or Adobe PDF file formats only.

FOR FURTHER INFORMATION CONTACT: Melissa Neuman, NMFS, West Coast Region, (562) 980-4115; or Lisa Manning, NMFS, Office of Protected Resources, (301) 427-8466.

SUPPLEMENTARY INFORMATION:

Background

On July 1, 2013, we received a petition from the Natural Resources Defense Council (NRDC) to list the pinto abalone (*Haliotis kamtschatkana*) as threatened or endangered under the ESA. The petitioners also requested that critical habitat be designated for the species under the ESA. On August 5, 2013, we received a second petition, filed by the Center for Biological Diversity (CBD) to list the pinto abalone under the ESA and designate critical habitat. Both petitions bring forth much of the same or related factual information on the biology and ecology

of pinto abalone, and raise several similar issues regarding potential factors affecting this species. As a result, we are considering both petitions simultaneously in this 90-day finding.

Copies of the petitions are available upon request (see ADDRESSES, above).

ESA Statutory, Regulatory, and Policy Provisions and Evaluation Framework

Section 4(b)(3)(A) of the ESA of 1973, as amended (16 U.S.C. 1531 et seq.), requires, to the maximum extent practicable, that within 90 days of receipt of a petition to list a species as threatened or endangered, the Secretary of Commerce make a finding on whether that petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, and to promptly publish such finding in the Federal Register (16 U.S.C. 1533(b)(3)(A)). When it is found that substantial scientific or commercial information in a petition indicates the petitioned action may be warranted (a "positive 90-day finding"), we are required to promptly commence a review of the status of the species concerned, during which we will conduct a comprehensive review of the best available scientific and commercial information. In such cases, we conclude the status review with a finding published in the Federal Register as to whether or not the petitioned action is warranted within 12 months of receipt of the petition. Because the finding at the 12-month stage is based on a thorough review of the available information, as compared to the more limited scope of review at the 90-day stage, a "may be warranted" finding does not prejudice the outcome of the status review.

Under the ESA, a listing determination may address a species, which is defined to also include any subspecies and, for vertebrate species, any distinct population segment (DPS) which interbreeds when mature (16 U.S.C. 1532(16)). A joint NMFS-U.S. Fish and Wildlife Service (USFWS) (jointly, "the Services") policy clarifies the agencies' interpretation of the phrase "distinct population segment" for the purposes of listing, delisting, and reclassifying a species

under the ESA (61 FR 4722; February 7, 1996). A species, subspecies, or DPS is "endangered" if it is in danger of extinction throughout all or a significant portion of its range, and "threatened" if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532(6) and (20)). Pursuant to the ESA and our implementing regulations, we determine whether species are threatened or endangered based on any one or a combination of the following factors: (1) the present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) the inadequacy of existing regulatory mechanisms; and (5) any other natural or manmade factors affecting the species' continued existence (16 U.S.C. 1533(a)(1), 50 CFR 424.11(c)).

ESA implementing regulations define "substantial information" in the context of reviewing a petition to list, delist, or reclassify a species as the amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted (50 CFR 424.14(b)). In evaluating whether substantial information is contained in a petition, the Secretary must consider whether the petition: (1) clearly indicates the administrative measure recommended and gives the scientific and any common name of the species involved; (2) contains detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved and any threats faced by the species; (3) provides information regarding the status of the species over all or a significant portion of its range; and (4) is accompanied by the appropriate supporting documentation in the form of bibliographic references, reprints of pertinent publications, copies of reports or letters from authorities, and maps (50 CFR 424.14(b)(2)).

At the 90-day stage, we evaluate the petitioners' request based upon the information in the petition, including its references and the information readily available in our files. We do not conduct additional research and we do not solicit information from parties outside the agency to help us in evaluating the petition. We will accept the petitioners' sources and characterizations of the information presented if they appear to be based on accepted scientific principles, unless we have specific information in our files indicating the petition's information is incorrect, unreliable, obsolete, or otherwise irrelevant to the requested action. Information that is susceptible to more than one interpretation or that is contradicted by other available information will not be dismissed at the 90-day finding stage, so long as it is reliable and a reasonable person would conclude it supports the petitioners' assertions. Conclusive information indicating the species may meet the ESA's requirements for listing is not required to make a positive 90-day finding. We will not conclude that a lack of specific information negates a positive 90-day finding if a reasonable person would conclude that the uncertainty from the lack of information suggests an extinction risk of concern for the species at issue.

To make a 90-day finding on a petition to list a species, we evaluate whether the petition presents substantial scientific or commercial information indicating the subject species may be either threatened or endangered, as defined by the ESA. First, we evaluate whether the information presented in the petition, along with the information readily available in our files, indicates that the petitioned entity constitutes a "species" eligible for listing under the ESA. Next, we evaluate whether the information indicates that the species faces an extinction risk that is cause for concern; this may be indicated in information expressly discussing the species' status and trends, or in information describing impacts and threats to the species. We evaluate any information on specific demographic factors pertinent to evaluating extinction risk for the

species (e.g., population abundance and trends, productivity, spatial structure, age structure, sex ratio, diversity, current and historical range, habitat integrity or fragmentation), and the potential contribution of identified demographic risks to extinction risk for the species. We then evaluate the potential links between these demographic risks and the causative impacts and threats identified in section 4(a)(1).

Information presented on impacts or threats should be specific to the species and should reasonably suggest that one or more of these factors may be operative threats that act or have acted on the species to the point that it may warrant protection under the ESA. Broad statements about generalized threats to the species, or identification of factors that could negatively impact a species, do not constitute substantial information indicating that listing may be warranted. We look for information indicating that not only is the particular species exposed to a factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response.

Many petitions identify risk classifications made by non-governmental organizations, such as the International Union on the Conservation of Nature (IUCN), the American Fisheries Society, or NatureServe, as evidence of extinction risk for a species. Risk classifications by other organizations or made under other Federal or state statutes may be informative, but the classification alone does not provide the rationale for a positive 90-day finding under the ESA. For example, as explained by NatureServe, their assessments of a species' conservation status do "not constitute a recommendation by NatureServe for listing under the U.S. Endangered Species Act" because NatureServe assessments "have different criteria, evidence requirements, purposes and taxonomic coverage than government lists of endangered and threatened species, and therefore these two types of lists should not be expected to coincide"

(<http://www.natureserve.org/prodServices/statusAssessment.jsp>). Thus, when a petition cites such classifications, we will evaluate the source of information that the classification is based upon in light of the standards on extinction risk and impacts or threats discussed above.

Distribution and Life History of the Pinto Abalone

The pinto abalone is a marine gastropod mollusc and a member of the family Haliotidae and the genus Haliotis. Of the seven species of abalone found along the west coast of North America (Geiger, 1999), pinto abalone have the broadest latitudinal range extending from Sitka Island, Alaska to Baja California, Mexico (Campbell, 2000), and it is the predominant abalone found in Washington and Alaska, and in British Columbia, Canada. Two subspecies of pinto abalone have been recognized by taxonomists: the northern form (Haliotis kamtschatkana kamtschatkana) is distributed from Alaska south to Point Conception, California; and the southern form, or “threaded abalone” (Haliotis kamtschatkana assimilis) is distributed from central California to Turtle Bay in Baja California, Mexico (Geiger, 1999).

The pinto abalone’s muscular foot is tan and is used to adhere to hard substrate and for locomotion. The epipodium (the circular fringe of skin around the foot) and tentacles are mottled yellow to dark tan with vertical banding patterns. The underside of the foot is pearly white. The outer surface of the shell is characterized by irregular lumps, mottled red and/or green coloration, and 3-6 raised, open respiratory pores. Paralleling the respiratory pores is a deep groove (Stevick, 2010).

Pinto abalone occur in intertidal and subtidal habitats (0-20m depth, most commonly 0-10m depth; Rothaus et al., 2008) that vary with respect to exposure and contain hard substrate (bedrock and boulders/cobble) with ample quantities of benthic diatoms, and micro- and macro-algae. Pinto abalone are found in areas with little freshwater influence (salinity ≥ 30 parts per

thousand), and can tolerate wide ranges in temperature, from 2 to 24 degrees Celsius, based on laboratory experiments (COSEWIC, 2009).

Pinto abalone exhibit separate sexes and are thought to reach sexual maturity at sizes ranging between 50-70 mm shell length, which correspond to ages ranging between 2 to 5 years (Rothaus et al., 2008; COSEWIC, 2009). Adults cluster in spawning aggregations and broadcast sperm or eggs into the water sometime between spring and late summer (Campbell et al., 1992; Stevick, 2010). This type of spawning strategy depends on densely aggregated adults (e.g., within 1–2 meters of conspecifics) to achieve the high gamete densities needed for successful fertilization (Davis, 1996; Babcock and Keesing, 1999). Larvae continue to develop in the water column over a 5- to 10-day period (perhaps up to 13 days at cooler temperatures) before settling on to hard substrate in water that is slightly deeper than where spawning adults aggregate (Rothaus et al., 2008; COSEWIC, 2009). This relatively short dispersive phase combined with hydrodynamic conditions during the time of spawning may limit dispersal distances (Bouma, 2007). Once settled onto rocky substrata, typically encrusted with coralline algae, pinto abalone juveniles consume benthic diatoms, bacterial films, and microalgae (COSEWIC, 2009). Adults feed on benthic macroalgae, including drift kelp (COSEWIC, 2009). Growth rates can vary depending on food availability, water temperature, and other environmental factors (COSEWIC, 2009). Pinto abalone are long-lived (approximately 20-50 years) and reach a maximum shell length of 14 to 16.5 cm (Shepherd et al., 2000; Rothaus et al., 2008). Pinto abalone are preyed upon by a wide variety of marine predators including sea stars, fishes, octopus, the southern sea otter, river otters and Cancer crabs.

Status and Abundance Trends of the Pinto Abalone

The pinto abalone has been a target species for recreational and/or commercial fisheries in Alaska, British Columbia, Washington, and California. A full discussion of the impacts of fisheries on pinto abalone populations is discussed in the Overutilization for Commercial, Recreational, Scientific, or Educational Purposes listing factor section below. In summary, fisheries-dependent information suggests declines ranging between 80-99 percent throughout portions of the species' range (Woodby et al., 2000; Jamieson, 1999; Rogers-Bennett, 2007).

Fishery-independent information from Alaska, British Columbia, Washington, and California corroborate the declining trends suggested by landings data. Qualitative observations during dive surveys conducted in Southeastern Alaska from 1988-1999, suggest a continued, steady decline in pinto abalone densities (Woodby et al., 2000). In British Columbia, fishery-independent surveys confirmed that natural stock rebuilding did not occur after fishery closure in 1990 and some populations further declined (Campbell, 2000; COSEWIC, 2009). Densities of mature pinto abalone on the central coast of British Columbia and in the Queen Charlotte Islands have declined by approximately 80-90 percent since 1978 (COSEWIC 2009). In Washington, fishery-independent surveys at index stations in the San Juan Archipelago indicate that pinto abalone abundance has declined by 83 percent, density has declined from 0.18 to 0.05 abalone per meter squared overall, and mean shell length has increased, suggesting recruitment failure (Rothaus et al., 2008; Essington et al., 2011). There is very little information on population status of pinto abalone in Oregon (Rogers-Bennett 2007), and the petitioners suspect that they have never occurred in abundances large enough to support fishing activity there. In California, comparison of pinto abalone numbers in the early 1970s to the 1999-2003 period at three index sites in northern California showed a decline of 99 percent, (Rogers-Bennett, 2007) and the species is currently rare throughout California (Rogers-Bennett et al., 2002). In Mexico, current-

day abalone landings range between 350-400 metric tons per year, an order of magnitude lower than catches recorded in the mid-1900s. The incidental collection of the southern subspecies of pinto abalone in the Mexican fishery is unknown as is the species' status and abundance trends.

Analysis of the Petitions

The two petitions request the same action, to list the pinto abalone as endangered or threatened under the ESA and to designate critical habitat for the species. In addition, NRDC requested the following alternative to listing the species throughout its range:

“In the alternative, NMFS should list the southern subspecies of pinto abalone as endangered, and identify distinct population segments (DPSs) of the northern subspecies of pinto abalone and list such DPSs as endangered or threatened.”

The ESA allows for the listing of species and subspecies of invertebrates, but does not allow for listing of invertebrate DPSs. Thus, NMFS does not have the authority to list DPSs of pinto abalone or to list DPSs of either of its two recognized subspecies, as requested by the NRDC.

The petitions contain similar information on the species, including the taxonomy, species description, geographic distribution, habitat, population status and trends, and factors contributing to the species' decline. Both petitioners identified historical overfishing, current low densities resulting in low recruitment rates, and poaching as the primary factors contributing to the decline of pinto abalone. The petitioners state that predation, inadequate state fishing regulations, climate change, and ocean acidification also pose serious threats to the species' persistence.

In the following sections, we analyze the information presented by the petitions and readily available in our files regarding the specific ESA section 4(a)(1) factors (hereafter, “listing factors”) affecting the population’s risk of extinction.

The Present or Threatened Destruction, Modification, or Curtailment of the Species’ Habitat or Range

Both petitions suggest that increases in atmospheric CO₂ and other greenhouse gases that have occurred since the industrial era began in the 1700s pose a serious emerging threat to pinto abalone. Specifically, the petitioners highlight impacts of the following stressors that are linked to greenhouse gas emissions: increasing sea surface temperatures, increased incursions of low salinity water into coastal areas (Essington et al., 2011), sea level rise, and ocean acidification. The petitioners include greenhouse gas emissions and its associated impacts under different listing factors. The NRDC discusses greenhouse gas emissions and associated impacts in the Other Natural or Manmade Factors listing factor section, while CBD includes discussions of this threat under this listing factor, and the Disease and Predation and Inadequate Regulatory Mechanisms listing factor sections. We will summarize the information presented by the petitioners and in our files only here, but recognize that climate change and its associated impacts could also be included in the Other Natural or Manmade Factors section.

Direct impacts of water quality parameters associated with climate change on pinto abalone were evident in a study conducted by Bouma (2007), whereby larvae experienced higher mortality rates at decreased salinities (< 26 practical salinity units) and elevated water temperatures (> 21° Celsius). Recent studies by Crim et al. (2011) and Friedman et al. (2012) suggest that elevated levels of dissolved CO₂ in seawater result in negative impacts to shell development and survival of pinto abalone larvae. In addition, elevated levels of dissolved CO₂

and low pH have been observed in coastal areas along the coasts of British Columbia and Washington (Feely et al., 2012; Freidman et al., 2012), suggesting that pinto abalone populations could be currently experiencing the effects of ocean acidification. The petitioners are also concerned about the simultaneous effects of multiple stressors that are associated with climate change. For example, reddish-rayed abalone (H. cocciradiata) experienced lower than expected shell calcification rates when exposed to elevated temperatures and low pH than those observed when larvae were exposed to each stressor in isolation (Byrne et al., 2011). Indirect impacts from climate-mediated habitat changes may reduce the availability of food sources and habitats for pinto abalone, especially in the form of kelp beds and coralline algae (Tomascik and Holmes, 2003; Rogers-Bennett, 2007; COSEWIC, 2009; Rogers-Bennett et al., 2011).

We conclude that the information in the petitions and in our files suggests that climate change and its associated impacts, especially low salinity, elevated water temperatures, and ocean acidification may already be impacting pinto abalone populations in some areas and may impede the continued existence of the species in to the future. However, additional information regarding predicted rates of change in these parameters by area, including error terms, are necessary to evaluate future impacts to pinto abalone survival. The information provided on the indirect effects of climate change on the availability of food sources and suitable settlement habitat is insufficient to evaluate whether these factors may be reducing the quality or quantity of pinto abalone habitat enough such that listing may be warranted.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Information from both petitions suggests that fisheries have contributed historically to population declines of pinto abalone throughout their range. Pinto abalone were harvested in commercial fisheries in Alaska, British Columbia, and California, until their closures in 1995,

1990 and 1996, respectively. In Alaska, the fishery began in the mid-1960s and operated initially with very few restrictions (Woodby et al., 2000). As landings fell dramatically in the early 1980s, a subsequent rise in the ex-vessel value ensued, possibly leading to increased fishing pressure that was not offset by increasingly stringent catch guidelines and minimum size limits (Woodby et al., 2000; Herbert, 2011). As a result, catch-per-unit-effort fell by 90 percent between the peak of the fishery in 1979 (172 metric tons) and 1995, the last year of the fishery (Woodby et al., 2000). The commercial fishery in British Columbia began in the early 1900s with little or no regulation. The fishery was small and sporadic until the 1950s, when effort increased due to the introduction of SCUBA gear and other improved fishing technologies (e.g. freezing) (Muse 1998). Landings peaked in the 1970's at over 400 metric tons per year (Sloan and Breen, 1988; Campbell, 2000) and by the mid-1980s, landings declined by roughly 88 percent (Jamieson, 1999). Despite regulations such as limited entry, quotas, size limits, and total allowable catch, abalone depletion continued and the fishery was closed in 1990 (Muse 1998) due to stock declines and conservation concerns (Jamieson, 2001). Commercial abalone fishing in California dates back to the 1950s, when Chinese-Americans began an intensive fishery in rocky intertidal areas. The fishery extended in to subtidal areas with the advent of SCUBA in the 1900s. Landings ranged between about 1,800-2,200 metric tons annually from 1952-1968, declined rapidly through the early 1980s by an order of magnitude, and gradually and steadily declined another order of magnitude until the fishery closed in 1996 (CDFW 2005). Pinto abalone were not targeted by the California fishery; however, approximately 21,000 animals belonging to the southern subspecies were removed between 1969-1995 (Rogers-Bennett et al., 2002). Pinto abalone declines of approximately 90 percent were estimated using historical data (both fishery-dependent and –independent data) to back-calculate historical baseline abundances

(Rogers-Bennett et al., 2002). In Mexico, abalone fishing began at the end of the 19th century, peaked in the mid-20th century at 6,000 metric tons of meat per year, and currently ranges between 350 to 400 metric tons per year (OECD, 2012). The current-day, small-scale fishery is located on the western coast of the Baja California Peninsula and includes green (H. fulgens), pink (H. corrugata), black (H. cracherodii), white (H. sorenseni), and red (H. rufescens) abalone (OECD, 2012). This fishery is primarily based upon two species, the green and pink abalone, which together represent over 95 percent of the total catch. The Mexican government classified this fishery as deteriorated in 1996 largely because of declines in green abalone populations. Although the southern subspecies of pinto abalone is not mentioned as being a part of this fishery, it is likely that the species has been incidentally captured in Mexico.

Recreational and/or subsistence fisheries were conducted in British Columbia, Washington and California until their closures in 1990, 1994 and 1997, respectively. Unfortunately, annual harvest information for these recreational fisheries was either not recorded or is unavailable (Rothaus et al., 2008). Currently, Alaska permits subsistence and personal use fishing with a catch limit of up to five pinto abalone per day and a minimum shell length of 3.5 inches. In Oregon, a recreational fishery remains with limits of one abalone per day, per person, and five per year (ODFW UD).

The petitioners assert that pinto abalone populations in many areas throughout their range have not recovered despite commercial and recreational fishery closures and more restrictive regulations for remaining subsistence, personal use and recreational fisheries. The petitioners argue that historical fishing reduced pinto abalone densities to levels that were below those necessary for successful fertilization in many areas.

We conclude that the petitions and information in our files present substantial evidence that fisheries throughout a large portion of the species' range had an impact on the viability of pinto abalone populations through density reduction and possibly subsequent reproductive failure that may continue today in some areas. This information suggests that the impacts of historical fishing may continue to affect the continued existence of pinto abalone populations, despite the fact that the threat itself has been removed. To better evaluate these continued impacts, more fishery-independent information on abalone density, size distributions, and nearest neighbor distances is necessary. To further evaluate the potential impact of the current subsistence, personal use, recreational, and commercial fisheries in Alaska, Oregon, and Mexico, more information regarding the density, size distributions, and nearest neighbor distances of pinto abalone populations in areas that overlap with fishing effort is necessary.

Disease or Predation

The CBD petition briefly mentions that pinto abalone are susceptible to a protist parasite in aquaculture environments and asserts that diseases and parasites do pose risks to abalone in general, especially as ocean temperatures rise due to climate change impacts. The petition does not provide any additional information to support that disease is a factor affecting the species' continued existence such that listing may be warranted. Thus, the available information is insufficient to evaluate if disease may be affecting the continued existence of pinto abalone.

The petitioners list crabs, octopus, and sea stars as major predators of pinto abalone (Griffiths and Gosselin 2008). The NRDC believes that pinto abalone face a high level of predation by sea otters in Alaska based on information contained within Alaska Department of Fish and Game (ADFG, 2013). The NRDC does not believe that sea otters represent the main cause of pinto abalone declines in other locations because: (1) pinto abalone populations are still

declining in areas, especially in British Columbia, where sea otters are not present; and (2) the persistence of large animals in Washington (most animals are > 100 mm shell length) suggests that predation by sea otters (which selectively prey on large abalone) is not having a large impact on populations there.

We conclude that the NRDC petition and information in our files present substantial evidence that predation may be having an impact on the continued existence of pinto abalone in some areas of the range (i.e. by sea otters in Alaska), but not others. Additional information regarding sea otter abundance (historical, present, and predicted future), predation rates, and prey composition from subtidal areas (25 meters depth) up into the intertidal zone in Southeastern Alaska and Washington is necessary to determine whether sea otter predation is contributing to the decline of pinto abalone populations.

Inadequacy of Existing Regulatory Mechanisms

The petitions assert that the inadequacy of existing Federal, state, or international regulatory mechanisms has contributed to the continued decline of pinto abalone populations throughout a large portion of their range. The petitioners contend that despite Federal, state, and international fisheries' closures approximately two decades ago, a Federal threatened listing in Canada under the Species at Risk Act in 1999 (and upgrading to endangered status in 2009; COESWIC, 2009), addition to the NOAA Species of Concern List in 2004, the development of recovery plans in Canada and California (NRAP, 2003; CDFW 2005), an abalone rebuilding strategy implemented in Mexico in 2000 (OECD, 2012), and stricter measures regulating subsistence, personal use, recreational and commercial fisheries where they remain, pinto abalone populations continue to decline. The petitioners assert that this continued decline is likely the result of multiple stressors (i.e. historical overharvest, current harvest, discard

mortality, poaching, and predation by sea otters) that have occurred or are occurring in different combinations, and acting in synergistic ways depending on location, to further reduce densities and the reproductive potential of remaining pinto abalone populations. The petitioners provide evidence to indicate that four of these stressors, historical overharvest, current harvest, discard mortality, and poaching, may be occurring because of inadequate past and present regulations and lack of enforcement of those regulations by state, Federal, and international governing bodies.

The states invoked increasingly protective measures during their commercial fisheries (e.g, bag limits, size limits, quotas, limited entry) to safeguard pinto abalone populations, but according to the petitioners these measures were either not restrictive enough, were not followed or enforced, and/or came too late to prevent the species' continued decline even after the fisheries were closed. In early 2012, Alaska closed its sport fishery and limited the subsistence and personal use fisheries to five abalone per day with a minimum shell length of 3.5 inches. Pinto abalone may only be collected by hand, using snorkel gear, and using abalone irons; the use of compressed air has been prohibited since 1997 (Herbert, pers. comm.). The 3.5-inch size limit failed to prevent stock collapse in the Alaska commercial fishery before its closure (Woodby et al., 2000). The NRDC petition suggests that this size limit may be too low to sustain current-day subsistence and personal use fishing pressure in addition to other stressors such as predation by sea otters and discard mortality. The NRDC believes that discard mortality of smaller pinto abalone (many abalone are damaged during harvesting) by abalone fishers is a problem in areas where abalone harvest is legal.

Both petitions state that poaching has threatened and continues to plague pinto abalone populations throughout their range. In the Pacific Northwest, pinto abalone are particularly

susceptible to poaching because they aggregate in relatively shallow waters, they occur in remote and largely unpatrolled coastlines and their market value remains high. Authorities in British Columbia have reported 30 abalone poaching convictions between 1997 and 2006, and they estimate that this only reflects a small percentage (10-20 percent) of the actual poaching activity (COSEWIC, 2009). The Organisation for Economic Co-Operation and Development (OECD, 2012) reports that even though the abalone rebuilding plan in Mexico is entirely focused on controlling fishing effort to address fishery decline, disease, climate change, predation, poaching, and a lack of fishery surveillance by the Mexican government also threaten the recovery of the fishery. A number of cases involving the illegal trade of federally protected abalone from Mexico into the United States and Canada (white and black in the United States and pinto abalone in Canada) have occurred over the last decade (Zetwo, pers. communication), indicating that existing regulatory mechanisms in Mexico have not eliminated risks to pinto abalone posed by poaching.

The CBD petition asserts that existing regulatory mechanisms are inadequate to address the threats to pinto abalone posed by greenhouse gas emissions. CBD argues that in the United States, domestic laws that protect the environment are only partially being implemented and therefore are not sufficient to reverse predicted increases in greenhouse gases in our atmosphere, and will merely slow the rate at which predicted increases will occur. On the international stage, emission reduction targets have been set and pledges have been made at a number of world conferences, but many countries, including the United States, have not met their reduction goals. The petition does not discuss any specifics regarding what levels of greenhouse gas emissions would adequately protect pinto abalone populations from the impacts of climate change, or the timeframe over which reductions would need to occur in order to safeguard pinto abalone

populations. Thus, it is unclear the level and extent to which existing regulatory mechanisms are inadequate to protect pinto abalone from this specific threat.

The CBD petition contends that inadequate regulation of commercial abalone farms and captive propagation and enhancement programs for restoring pinto abalone populations pose risks to wild pinto abalone populations including: disease-spread, loss of genetic diversity, and reduced fitness. However the petition does not provide any specific information that validates their concerns, such as examples of how diseases spread by land-based facilities, or that the outplanting of captive-raised animals that may be genetically or behaviorally unfit has led to the decline of pinto abalone populations. The petition also does not explain how inadequate Federal and state regulation of these programs has led to the species' decline.

Based on the information in the petitions and in our files as discussed above, we conclude that existing regulatory mechanisms may be inadequate to ensure sustainable fishing, minimize incidental collection, and sufficiently reduce or eliminate poaching of pinto abalone populations. To further evaluate the adequacy of existing regulatory mechanisms, more information is needed regarding the effectiveness of recent fishing restrictions and the level of poaching occurring in the United States, Canada, and Mexico. We conclude that while the information presented in the CBD petition suggests that regulations regarding greenhouse gas emissions may not be adequate to reverse the predicted rising trend in greenhouse gas emissions, there is great uncertainty regarding the population-level impacts of climate change to pinto abalone and the adaptability of pinto abalone to climate change effects occurring over long time scales. Therefore, the available information is not sufficient to determine if inadequate regulation of greenhouse gas emissions may be threatening pinto abalone populations such that listing may be warranted. We conclude that the CBD petition does not present sufficient information to determine whether inadequate

regulation of abalone farms or captive propagation and enhancement programs are impacting the continued existence of pinto abalone populations.

Other Natural or Manmade Factors

The NRDC petition discusses the direct and indirect impacts of climate change under this listing factor in their petition. We have reviewed the information in the petition and in our files under the listing factor entitled The Present or Threatened Destruction, Modification, or Curtailment of the Species' Habitat or Range (see above).

The CBD petition discusses the threat imposed by low pinto abalone densities and resulting reproductive failure on pinto abalone populations under this listing factor. We have reviewed the information in the petition and in our files under the listing factor entitled Overutilization for Commercial, Recreational, Scientific, or Educational Purposes (see above).

Petition Finding

After reviewing the information contained in both petitions, as well as information readily available in our files, we conclude the petitions present substantial scientific information indicating the petitioned action of listing the pinto abalone as a threatened or endangered may be warranted. Therefore, in accordance with section 4(b)(3)(A) of the ESA and NMFS' implementing regulations (50 CFR 424.14(b)(3)), we will commence a status review of the species. Following completion of the status review, we will determine whether the species is in danger of extinction (endangered) or likely to become so within the foreseeable future (threatened) throughout all or a significant portion of its range. We now initiate this review, and thus, the pinto abalone is considered to be a candidate species (50 CFR 424.15(b)). Within 12 months of the receipt of the NRDC petition (July 1, 2013), we will make a finding as to whether listing the species as endangered or threatened is warranted as required by section 4(b)(3)(B) of

the ESA. If listing the species is warranted, we will publish a proposed rule and solicit public comments before developing and publishing a final rule.

Information Solicited

To ensure that the status review is based on the best available scientific and commercial data, we are soliciting information relevant to whether pinto abalone is threatened or endangered. Specifically, we are soliciting published and unpublished information in the following areas: (1) long-term trends in abundance, distribution, size ranges, and nearest neighbor distances, especially in areas where fishing pressure, sea otter predation, and poaching occurs; (2) potential factors for decline now and in the future, especially overharvesting, poaching, natural predation (especially by southern sea otters), disease, climate change, and ocean acidification; (3) southern sea otter population status, predation rates, and prey composition in Alaska and Washington from coastal intertidal areas to 25 meters depth; (4) population status in Mexico; (5) factors important for management of ongoing subsistence, personal use, and recreational fisheries; (6) current estimates of population size and available habitat; (7) data on various life history parameters including, but not limited to: size/age at maturity, fecundity, length of larval stage, and larval dispersal dynamics; (8) enforcement information from Alaska, Washington, Oregon, California, and Mexico regarding the frequency, severity, and location of poaching incidents; (9) projections on population growth or decline and risk of extinction considering the impacts of stressors; and (10) ongoing or planned efforts to protect and restore the species and its habitat.

We also request information on critical habitat for pinto abalone. Specifically, we request information on the physical and biological habitat features that are essential to the conservation of the species and identification of habitat areas that include these essential physical and biological features. Essential features include, but are not limited to: (1) space for individual and

population growth and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for reproduction and development of offspring; and (5) habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of the species (50 CFR 424.12). For habitat areas potentially qualifying as critical habitat, we request information describing: (1) the activities that affect the habitat areas or could be affected by the designation; and (2) the economic impacts, impacts to national security, or other relevant impacts of additional requirements of management measures likely to result from the designation.

We request that all information be accompanied by: (1) supporting documentation such as maps, raw data with associated documentation, bibliographic references, or reprints of pertinent publications; and (2) the submitter's name, mailing address, e-mail address, and any association, institution, or business that the person represents.

References Cited

A complete list of references is available upon request from the NMFS West Coast Regional Office (see ADDRESSES).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

Dated: November 12, 2013

Samuel D. Rauch, III.

Deputy Assistant Administrator for Regulatory Programs,

performing the functions and duties of the

Assistant Administrator for Fisheries,

National Marine Fisheries Service.

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